

RESHETNIKOV, A. G.

Reshetnikov, A. G. "Water leakage from residential water supply system,"  
Sbornik materialov po kommunal. khoz-vu, No. 5, 1948, p. 53-61

SO: U-2888, Letopis Zhurnal'nykh Sudey, No. 1, 1949

a, n, L 9794-66  
ACC NR: AP5028540 SOURCE CODE: UR/0286/65/000/020/0140/0141  
AUTHORS: Brovin, I. Ye.; Reshetnikov, A. I.; Grennaus, M. A.; Sigal, M. S.; Sidel'skiy, D. A.  
ORG: none  
TITLE: Device for filling jars with a product. Class 81, No. 175868  
SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 140-141  
TOPIC TAGS: food product machinery, food technology, food sanitation  
ABSTRACT: This Author Certificate presents a device for filling jars, containing a loading bin, a product-metering device with pistons, and a mechanism for supplying empty jars and removing filled jars. To use it for packaging of sauerkraut, the metering device consists of a cylindrical body which rotates around a vertical axis and which has slots with metering cylinders located uniformly around its perimeter. These metering cylinders consist of two half-cylinders, one of which is pressed into the slot while the other is connected to the carriage with the help of a spring-loaded lever with a roller at its free end. This roller interacts with a regulating template to move the half-cylinder into the slots. A curved cut-off knife is also provided. To separate the sauerkraut from the brine and to feed it to the metering cylinders, a second feature of the device provides a scraping conveyor located under the bin with a comb-like unloader, an inclined belt conveyor with an underpan for  
Cord1/2 UDC: 664.843.974.2.036.532

L 9794-66

ACC NR: AP5028540

collecting the brine, and paddle-type loaders. The bin is equipped with a vibrator. To meter brine into the jars, a third feature provides a well-known rotary type liquid loader. To provide constant product delivery by the paddle loader, a spring-loaded diaphragm is located in the loader exit pipe. This diaphragm is connected to a rod which acts through a rheostat on the driving mechanism changing the conveyor and paddle feeder speeds.

SUB CODE: 13, 06/ SUBM DATE: 05Jul61/

CC  
Card 2/2

GAYEVSKIY, V.L.; RABINOVICH, Yu.I.; RESHETNIKOV, A.I.

Measuring the water temperature of the Caspian Sea by means of  
a radiation thermometer. Trudy GGO no.170:202-206 '65.  
(MIRA 18:9)

RESHETNIKOV, A.I.

Veteran of the country's main line. Put' i put.khoz. 6 no.5:10  
'62. (MIRA 15:4)

1. Nachal'nik otdela kadrov Leningrad-Moskovskoy distantii  
Oktyabr'skoy dorogi.  
(Railroads---Employees)

L 38219-66 EWT(1)/FSS-2 TT/JT GW

ACC NR: AP6019458

(N)

SOURCE CODE: UR/0384/66/000/001/0027/0032

AUTHOR: Kondrat'yev, K. Ya. (Professor); Gayevskiy, V. L. (Candidate of physico-mathematical sciences); Konashenok, V. N.; Reshetnikov, A. I. 78  
B

CRG: none

TITLE: Lunar meteorological observatory

SOURCE: Zemlya i vseennaya, no. 1, 1966, 27-32

TOPIC TAGS: lunar base, lunar communication, meteorologic satellite, laser application

ABSTRACT: The establishment of an observatory on the moon for the purpose of carrying out meteorological, astrophysical, and geophysical studies of the earth is discussed. While the advantages of a moon-based observatory are stressed, the authors emphasize that it will not obviate the need for earth satellites for meteorological studies. The lunar observatory will be especially important in investigating circulation in the earth's atmosphere. The use of laser beams in lunar-based studies of the earth is mentioned. One of the principal difficulties is the need to record small energy flows in a brief time span. This problem may be partially solved through the use of large mirrors which will serve as boosters. Orig. art. has: 2 photographs.

SUB CODE: 22,04,03

SUBM DATE: none

Cord 1/1 *ll*

L 37695-66 EWT(1)/FCC/FSS-2 TT/GW

ACC NR: AP6019596

SOURCE CODE: UR/0293/66/004/003/0427/0438

AUTHORS: Kondrat'yev, K. Ya.; Gayevskiy, V. L.; Konashenok, V. N.; Reshetnikov, A. I.

ORG: none

TITLE: Lunar meteorological observatory for earth observations

SOURCE: Kosmicheskiye issledovaniya, v. 4, no. 3, 1966, 427-438

TOPIC TAGS: lunar base, ~~meteorology~~, lunar atmosphere, earth atmosphere, spaceborne atmospheric observation, ~~lunar surface~~ atmosphere, ~~meteorology~~ *research facility*, solar energy, cloud cover, meteorologic satellite

ABSTRACT: The advantages of observing the earth's atmosphere from a lunar base are analyzed. Among such advantages listed are: the absence of a lunar atmosphere; a continuous observation of the earth, inasmuch as the same lunar surface faces the earth at all times; and solar energy utilization. The two disadvantages associated with such an observatory are the excessive distance and periodic librations both in longitude and in latitude. The terrestrial area covered by one or more lunar observatories can be determined from sun-earth-moon position studies. The possibility of camera coverage and visual observation of the cloud cover in the earth's atmosphere is evaluated by reviewing existing TV and photographic methods used on weather satellites such as Nimbus. For a 2-km resolution a 12' visual angle is needed from a lunar-based TV camera. The study of spatial resolution over a 200 x 200-km area by thermal radiation sensors requires an angular resolution of 2'. Two other methods of some

Cord 1/2

UDC: 551.501:523.3

L 37695-66

ACC NR: AP6019596

merit for observing cloud coverage are radar observation and a thermal balance of the terrestrial surface or its albedo. The important problem of determining the effect of solar activity on changes in the upper atmosphere is investigated. The respective advantages and disadvantages of weather satellites and lunar observatories are reviewed, and it is shown that a lunar observatory does not make weather satellites obsolete but instead supplements them. Orig. art. has: 5 figures and 5 formulas. [04]

SUB CODE: 22, 04/03/SUBM DATE: 27May65/ ORIG REF: 003/ ATD PRESS: 5041

Card 2/2



BRAVINSKIY, V.G.; RESHETNIKOV, A.M.

Tracing the development of microcracks in ceramics. Izv. AN SSSR.  
Ser. fiz. 27 no.9:1219-1223 S '63. (MIRA 16:9)  
(Ceramic materials--Testing) (Electron microscopy)

KROKHINA, A.I.; SPIVAK, G.V.; RESHETNIKOV, A.M.; ZHELNINSKAYA, R.I.

Electron-microscopic study of the structure of ceramic materials  
revealed by ionic etching. Izv. AN SSSR. Ser. fiz. 27 no.9:  
1224-1227 S '63. (MIRA 16:9)

(Electron microscopy) (Ceramic materials--Testing)

RESHETNIKOV, A.M.

4

PH  
NC

On the Shape of Tungsten Crystals. A. M. Reshetnikov, P. I. Salnikow, and R. M. Tsvetkov (Zhur. Tekhn. Fiz., 1968, 38, (3), 414-416).—[In Russian]. Various authors have claimed, on the basis of electron-microscopic observations, that the faces of grains of pure W were cube planes, irrespective of the origin and method of manufacture of the W. This is in disagreement with recognized theories of crystal growth, e.g. with that of Strazski and Suhrmann (Ann. Physik, 1947, [vi], 1, 153; M.A., 17, 420), who forecasted that the equilibrium faces of W should be dodecahedral. R., S., and T. show by projection drawings of dodecahedra that this habit is the correct one, in agreement with their own electron micrographs.—A. F. B.

(2)

A. M. RECHETNIKOV and V. D. GLEBOVA

"Investigation of the Feasibility of Using an Electron Microscope for Microcrystalloscopic Analysis of Electrovacuum Materials" from Annotations of Works Completed in 1955 at the State Union Sci. Res. Inst. Min. of Radio Engineering Ind.

So: B-3,080,964

137-1957-12-24351

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 12, p 201 (USSR)

AUTHOR: Reshetnikov, A. M.

TITLE: On the Diffusion Method of Brazing Titanium with Copper (O diffuzionnym metode payki titana s med'yu)

PERIODICAL: Tr. n.-i. in-ta. M-vo radiotekhn. prom-sti SSSR, 1957, Nr 2(38), p 105

ABSTRACT: Diffusion brazing of titanium with copper is employed in the making of a Ti-anticathode surface for dismountable X-ray tubes. A highly ground or polished Ti lamina (0.2 - 0.3 mm thick) is pressed tightly against the even surface of a copper disk by means of a steel clamp. The entire combination is placed in a vacuum furnace and heated to 880-890°. The resulting eutectic alloy (72 percent Cu; 28 percent Ti) along the Ti-Cu contact surface accomplishes a suitable metallic connection. The brazing requires approximately 15-20 minutes. The temperature of the furnace must not exceed 900°, lest the eutectic alloy form throughout the entire specimen. Tests of the tube yielded favorable results.

Card 1/1

G. N.

1. Titanium-Brazing Applications
2. Copper-Applications
3. Brazing-Applications

20-119-1-20/52

AUTHOR: Reshetnikov, A. M.

TITLE: On the Structure of Thin Films of  $Sb_2S_3$ , Which Were Obtained by Sublimation in a Nitrogen Atmosphere at Pressures Below 4 mm Hg (O strukture tonkikh plenok  $Sb_2S_3$ , poluchennykh vozgonkoy v atmosfere azota pri davleniyakh nizhe 4 mm rt.st.)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol.119, Nr 1, pp.75-78(USSR)

ABSTRACT: In the sublimation of antimony trisulfide in high vacuum on ( $10^{-5}$  mm Hg) a lacquer base smooth amorphous films form. The structure of such films was investigated thoroughly by L. I. Tatarinova. An analogous structure is also exhibited by films of  $Sb_2S_3$ , which were condensed on a fresh fraction surface of a rock salt crystal and of other crystalline supports. A perfectly different structure is shown by the films of  $Sb_2S_3$ , obtained in a rare gas or nitrogen atmosphere on a lacquer base and also on other bases at pressures below 4 torr. The sublimation of  $Sb_2S_3$  took place out of a quartz boat at  $\sim 550^\circ C$ . The films were produced at nitrogen pressures of 4; 2; 1; 0,5; 0,2;  $8 \cdot 10^{-2}$ ;  $3 \cdot 10^{-2}$ ;  $1 \cdot 10^{-2}$ ;  $5 \cdot 10^{-3}$ ;  $1 \cdot 10^{-3}$  mm Hg. The films obtained at 4 and 2 torr have a rough and

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On the Structure of Thin Films of  $\text{Sb}_2\text{S}_3$ , Which Were Obtained by Sublimation in a Nitrogen Atmosphere at Pressures Below 4 mm Hg

loose structure with small flakes. These flakes consist of chains of crystals of about 300 Å of antimony trisulfide. The films obtained at pressures of 1 mm Hg resemble much the just described films, but they are less "flaky". Some of them are unstable and change under the influence of an electron beam. At nitrogen pressures of 0,5 torr and below in general smooth layers without a noticeable structure are obtained, which could be observed by an electron microscope with an 5000-8000-fold magnification. When irradiated by an electron beam cracks form in such a layer. The mechanism of the formation of the layers of antimony trisulfide, which were condensed in a nitrogen atmosphere of 4 and 2 mm Hg. pressure differs principally from the mechanism of the condensate formation in vacuum. In case of high evaporation velocities the  $\text{Sb}_2\text{S}_3$  molecules collide and combine to groups or even to small crystals. Further the motion of such molecule groups and of the little crystals will obey Brown's law. Each small crystal is supposed to contain about 200000 molecules. The films, condensed in a nitrogen atmosphere, form of approaching molecule groups and of single molecules, which have lost a considerable part of their energy by collisions with each other and with

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20-119-1-20/52

On the Structure of Thin Films of  $Sb_2S_3$ , Which Were Obtained by Sublimation  
in a Nitrogen Atmosphere at Pressures Below 4 mm Hg

the nitrogen molecules. Under the influence of an electron  
beam the films become more compact. There are 4 figures  
and 5 references, 5 of which are Soviet.

PRESENTED: October 24, 1957, by N. V. Belov, Member, Academy of Sciences,  
USSR

SUBMITTED: October 22, 1957

Card 3/3



24.7100

77124  
SOV/70-4-6-25/31

AUTHOR: Reshetnikov, A. M.

TITLE: Concerning the Structure of Amorphous Antimony Sulfide Films. Brief Communications

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 6, pp 926-928 (USSR)

ABSTRACT: The known data on the structure of antimony sulfide films, produced by sublimating  $\text{Sb}_2\text{S}_3$  under vacuum upon celluloid substrate, can not be extended to antimony sulfide films produced under other conditions. The author studied the short-range order in amorphous films produced by sublimating  $\text{Sb}_2\text{S}_3$  from a quartz boat upon celluloid substrate at  $440^\circ\text{C}$  in a N atmosphere under a pressure of 0.1-0.2 mm mercury. The radial distribution curve on Fig. 2 was obtained on the basis of the electron diffraction intensities and the computations according

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Concerning the Structure of Amorphous  
Antimony Sulfide Films. Brief Com-  
munications

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$$\text{to: } 4\pi r^2 \sum_m K_m U_m(r) \Rightarrow 4\pi r^2 U_0 \sum_m K_m + \frac{2r}{\pi} \int_0^\infty s \cdot i(s) \sin s r ds, \quad (1)$$

where  $U_m(r)$  is a function of atomic density;  $U_0$  is  
average number of atoms in a spherical layer from  $r$   
to  $r + \Delta r$ ;  $s = (4\pi \sin \theta) / \lambda$ ;

$$i(s) = \sum_m K_m^2 \left( \frac{f_m^2}{\sum_m f_m^2} - 1 \right), \quad (2)$$

$$K_i^2 = \frac{\sum f_i^2(s) \cdot s^2}{\sum f_i^2(s) \cdot s^2}, \quad (3)$$

$f_1^2$  and  $f_2^2$  are atomic factors of Sb and S, respective-  
ly. The two maxima on the radial distribution curve

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munications

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correspond to interatomic distances 2.6 Å and 4.0 Å. The computed number of the nearest unlike atoms around Sb atoms is 5.9, and around S atoms, 3.95, which in round figures give 6 and 4, respectively. In crystalline  $\text{Sb}_2\text{S}_3$  each Sb is enveloped by 7 S atoms of which 6 are at distances varying from 2.49 to 3.16 Å, and the 7th is at 3.64 Å. It is likely that the same atomic arrangement is preserved in the amorphous modification. This is possible if it is assumed that the far-distanced 7th S atom, instead of being within the same maximum as the other 6, appears within the adjacent maximum of the radial distribution. N. V. Belov and L. I. Tatarinova are acknowledged for suggestions. There are 2 figures; and 5 references, 4 Soviet, 1 U.S. The U.S. reference is: R. L. Harris, R. E. Wood, H. L. Ritter, J. Amer. Chem. Soc., 73, 3151-3155, 1955.

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Concerning the Structure of Amorphous  
Antimony Sulfide Films. Brief Com-  
munications

77124

SOV/70-4-6-25/31

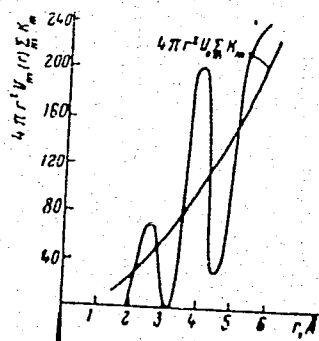


Fig. 2. Radial distribu-  
tion curve of amorphous  
 $\text{Sb}_2\text{S}_3$ .

SUBMITTED: August 21, 1959

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SOV/48-23-6-4/28

AUTHOR: Reshetnikov, A. M.

TITLE: Electron-microscopic Investigation of the Structure of Fine Films of Antimony-sulfite, Obtained by Vaporization in a Vacuum and in a Nitrogen Atmosphere at a Pressure of Less Than 4 torr (Elektronnomikroskopicheskoye issledovaniye struktury tonkikh plenok sernistoy sur'my, poluchennykh ispareniyem v vakuume i v atmosfere azota pri davleniyakh nizhe 4 mm rt. st.)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 13, Nr 6, pp 680 - 686 (USSR)

ABSTRACT: In recent years, antimony sulfite has been used to a considerable extent as photoconductive material in television target tubes. In the introduction, a number of papers dealing with the structure and the physical properties of thin films of this compound is mentioned; they showed that these layers have amorphous or crystalline structure. L. P. Tatarinova showed in one of his papers (Ref 2) that layers of this kind, vaporized on celluloid, have amorphous structure. In another paper (Ref 3) the influence exercised by the temperature of the base layer upon structure is investigated. In the second part of this paper the apparatus for the production of thin films of  $Sb_2S_3$  is described. It

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Electron-microscopic Investigation of the Structure of Fine Films of Antimony-sulfite, Obtained by Vaporization in a Vacuum and in a Nitrogen Atmosphere at a Pressure of Less Than 4 torr

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consists essentially of a two-stage pumping gear, a container in which vaporization is carried out, and a device for the supply of nitrogen. Vaporization is carried out at 500-550°C. The investigations were carried out after separation from the base layer. They showed that the condensation of the compound under investigation in vacuum furnishes amorphous structures on NaCl-monocrystals and on polycrystalline Sn-dioxides. If the vapor is condensed in a nitrogen atmosphere within the range of from 4 mm to  $1 \cdot 10^{-3}$  torr, certain definite structures are obtained. The author carried out investigations at ten different pressures within the aforementioned range; five figures are shown of these films (Figs 2,3,4 and 5), and the results obtained are discussed in detail. The structure varies between a crumbly structure at higher pressure and a zig-zag structure at pressures below 0.5 torr. This zig-zag structure is formed by cracks caused by the electron beam in the layer. In the last part of this paper the formation of thin films is dealt with. It is pointed out that the formation process in a vacuum differs essentially from that in a nitrogen atmosphere. They differ

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Electron-microscopic Investigation of the Structure of Fine Films of Antimony-sulfite, Obtained by Vaporization in a Vacuum and in a Nitrogen Atmosphere at a Pressure of Less Than 4 torr SOV/48-23-6-4/28

with respect to velocity and the rectilinear or nonrectilinear motion of the molecules. The following is then dealt with in detail: Velocity of vaporization, the number of possible (probable) collisions of molecules, the time needed for the molecules to move from vaporization to condensation, the density of the vaporized molecules in the space between vaporization and condensation, and, lastly, pressure. There are 5 figures and 11 references, 10 of which are Soviet.

Card 3/3

58

S/032/60/026/04/40/046  
B010/B006

AUTHORS: 1) Ivanov, K.A., 2) Konstantinov, V.A., 3) Ostapchenko, Ye.P.,  
Rashtnikov, A.M., 4) Avayev, V.V., 5) Mokhov, L.A., Dzedzichuk, V.P.,  
6) Lutugina, N.V.

TITLE: News in Brief

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 4, pp. 504-506

TEXT: 1) The author reports on the development of X-ray apparatus for measuring stresses of first order in welded designs. The apparatus (Fig., photograph) comprises a switchboard, high voltage transformer, X-ray tube (in a casing), a stand for the latter, a chamber, and mechanisms for vibrating and rotating the specimen. P.M. Lebedev and P.V. Shepelev collaborated in designing the chamber and the stand. A brief description of the apparatus is given. 2) The author recommends the use of an attachment (Fig.) for taking photographs of coarse-crystalline specimens by the 1-KROS camera.<sup>24</sup> The specimen which is fixed by a holder, is shifted by means of a cam which has the shape of opposite Archimedean spirals. Cam rotation shifts the specimen by  $\sin^2 \alpha$ , where  $\alpha$  = angle

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News in Brief

S/032/60/026/04/40/046  
B010/B006

of specimen displacement vertical to the incident X-ray. 3) The authors describe a dismountable vacuum tube (Fig.) for X-ray structural analysis. The tube casing has three openings for the X-rays and one for evacuation. The copper anode has a titanium mirror, the construction of which is described. 4) The author briefly describes a simple device (Fig., photograph) for lowering the chamber of the ISP-22 quartz spectrograph. 5) The authors describe a simple apparatus for sampling gas under reduced pressure. The apparatus (Fig., diagram) consists of two absorbers, a rheometer, and a vacuum pump. A short explanation of the diagram is given. 6) The author discusses the application of somewhat modified Taylor condensers for investigating rectification processes of ternary systems in the distillates of which demixing occurs. The mode of operation of the condensers is described by means of a diagram (Fig.). There are 6 figures and 1 reference.

ASSOCIATION: 6) Leningradskiy gosudarstvennyy universitet (Leningrad State University)

Card 2/2

L 19958-63

EPF(n)-2/EWP(q)/EWT(m)/BDS/EWP(B)/T-2/ES(w)-2--AFTTC/ASD/

SSD--Pu-4/Pab-4--JD/WH  
ACCESSION NR: AP3C07327

S/0048/63/027/009/1219/1223

AUTHOR: Bravinskiy, V.G.; B Reshetnikov, A.M.

TITLE: Investigation of the process of development of microcracks in ceramics  
/Report, Fourth All-Union Conference on Electron Microscopy held in Sumy\* 12-14  
March 1963/

SOURCE: AN SSSR, Ser.fizicheskaya, v.27, no.9, 1963, 1219-1223

TOPIC TAGS: strength of material , ceramics, corundum, microcrack

ABSTRACT: The formation and development of microcracks on the surface of ceramic specimens under increasing short-term and stead (long-term) mechanical stresses was studied. The materials investigated by means of the electron microscope described by A.M.Reshetnikov, V.G. Bravinskiy and V.P.Ivanov (Vorposy\* radioelektroniki, Seriya I, Elektronika, No.2, 32, 1963) were "aluminosilicate" and "alumino-oxide" high-alumina ceramics. The former consists of thin laminae of glass (25%) cemented together by crystals of corundum (67%) and celsian (Ba feldspar) (3%); the latter consists of 35% 10-15 micron corundum crystals with the voids filled with glass. In the short-term stress experiments the specimens were subjected to 50% the short-term breaking-point load for 300 min. A 0.3 mm<sup>2</sup> area on the polished

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ACCESSION NR: AP3007327

surface was examined at appropriate intervals at a magnification of 2500 X. The quantities determined were the number of cracks and their length. In view of the fact that most of the microcracks occur in the corundum crystals, the data were reduced to the ratios  $B/A$  and  $m/n$ , where  $A$  is the total number of crystals per  $0.1 \text{ mm}^2$  area (equal to 3600 for the aluminosilicate ceramic, and 1200 for the alumino-oxide ceramic),  $B$  is the number of crystals per  $0.1 \text{ mm}^2$  area showing cracks,  $n$  is the number of cracks evident in only one crystal, and  $m$  is the number of cracks extending through two or more crystals. Curves for  $B/A$  and  $m/n$  versus percent rupture stress (short-term tests) and  $B/A$  and  $m/n$  versus stressing time (long-term tests) are presented. The experimental data show that the process of breakdown of ceramic materials under stress begins with the appearance of cracks in individual corundum crystals (not between crystals or at the glass-crystal boundaries). With increasing stress or loading time these initial cracks grow and extend across the specimen, leading to eventual rupture. Orig.art.has: 5 figures.

Card 2/3

RESHETNIKOV, Aleksandr Vasil'yevich; GEMBOREK, G.L., red.; MAKAROVA,  
N.F., tekhn. red.

[Problems and exercises in chemistry for secondary schools; a  
manual for teachers] Sbornik zadach i uprazhnenii po khimii dlia  
srednei shkoly; posobie dlia uchitelei. Izd.2., ispr. i dop.  
Moskva, Uchpedgiz, 1962. 92 p. (MIRA 15:12)  
(Chemistry--Problems, exercises, etc.)

RESHETNIKOV, Aleksandr Vasil'yevich; POZDNYAKOVA, N.I., red.; MAKHOVA,  
N.N., tekhn.red.

[A collection of questions and problems in chemistry for  
secondary schools] Sbornik voprosov i zadach po khimii dlia  
srednei shkoly. Moskva, Gos.uchebno-pedagog.izd-vo M-va prosv.,  
1957. 142 p. (MIRA 11:1)  
(Chemistry--Problems, exercises, etc.)

RESHETNIKOV, A.V. (selo Perekopnoye, Saratovskoy oblasti)

Chemical laboratories in rural schools. Khim.v shkole 12 no.5:68-69  
S-O '57. (MIRA 10:10)

(Rural schools) (Chemical laboratories)

RESHETNIKOV, A.V.

Materials for technical training in chemistry in the rural school.  
Politekh.obuch. no.7:64-66 J1 '57. (MIRA 10:7)

1. Zaveduyushchiy uchebnoy chast'yu sredney shkoly s. Perekonnoye  
Yerskovskogo rayona Saratovskoy oblasti.  
(Chemistry--Study and teaching)

RESHETNIKOV, A.Ye.

Effect of  $\text{Co}^{60}$  gamma irradiation of seeds on the forms of water in  
leaf tissues of corn and wheat. Uzb. biol. zhur. 9 no.4:10-11 '65.  
(MIRA 18:10)

1. Institut yadernoy fiziki AN UzSSR.



KLEYTMAN, Samuil Lazarevich; LAGUNOV, Lazar' Yakovlevich; RESHETNIKOV,  
B.V., dotsent, otv.red.; PROKOPENKO, M.I., red.; TSYBALO, B.D.,  
tekh.n.red.

[Maintenance and repair of motor vehicles in automotive transporta-  
tion units] Tekhnicheskoe obsluzhivanie i remont avtomobilei v  
avtokhoziaistvakh. Izd.2., perer. i dop. Khar'kov, Izd-vo Khar'-  
kovskogo gos.univ.im. A.M.Gor'kogo, 1959. 514 p. (MIRA 13:3)  
(Motor vehicles--Maintenance and repair)

KLEYTMAN, Samuil Lazarevich; LAGUNOV, Lazar' Yakovlevich; RESHETNIKOV, B.V.,  
dotsent. otvetstvennyy redaktor; PROKOPENKO, M.I., redaktor;  
CHERNYSHENKO, Ya.F., tekhnicheskiy redaktor

[Maintenance and repair of automobiles in automobile depots]  
Tekhnicheskoe obsluzhivanie i remont avtomobilei v avtokhoziaistvakh.  
Khar'kov, Izd-vo Khar'kovskogo ordena trudovogo krasnogo znameni gos.  
univ. im. A.M.Gor'kogo, 1956. 303 p. (MLFA 10:3)  
(Automobiles--Repairing)

RECHETNIKOV D. B.,

Pylevidnoye Shiganiye Slantsev, Goryuchiye Slantsy, 1933, No 3,8

SO:

Goryuchiye Slantsy # 1934-35, TN .871  
G .74

KLYUVER, N.F., inzh.; RESHETNIKOV, D.V., inzh.

Automatic frequency control with efficient distribution of loads.  
Elek. sta. 32 no.1:44-49 Ja '61. (MIRA 16:7)

(White Russia—Electric power distribution)  
(Frequency regulation)

YERMAKOV, V.S., kand. tekhn. nauk, glav. red.; LEONKOV, A.M.,  
red.; MINKOV, V.A., red.; PEKELMS, G.B., kand. tekhn.  
nauk; RESHENIKOV, D.V., red.

[Coverage of fluctuating electrical loads in electric  
power systems] Problemy pokrytiya peremennykh elektro-  
nagruzok v energosistemakh. Minsk, Nauka i tekhnika,  
1965. 144 p. (MIRA 18:10)

1. Nauchno-tekhnicheskaya konferentsiya po problemam  
pokrytiya pikovykh nagruzok ob'yedinennoy energosistemy  
Severo-Zapada. Minsk, 1965.

BEREGOVSKIY, Vladimir Iosifovich; GUDIMA, Nikolay Vasil'yevich; VANYUKOV, V.A., professor doktor, zasluzhennyy deyatel' nauki i tekhniki, retsenzent; VANYUKOV, A.V., dotsent, kandidat tekhnicheskikh nauk, retsenzent; IL'ICHEV, G.Y., inzhener, retsenzent; ZADIKYAN, A.A., inzhener, retsenzent; RESHETNIKOV, P.G., redaktor; ARKHANGEL'SKAYA, M.S., redaktor izdatel'stva; ATTOPOVICH, M.K., tekhnicheskiiy redaktor

[Nickel metallurgy; a textbook for schools and courses for specialists]  
Metallurgiya nikelia; uchebnoe posobie dlia shkol i kursov masterov.  
Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi  
metallurgii, 1956. 355 p. (MLBA 9:10)  
(Nickel--Metallurgy)

AUTHOR: RESHETNIKOV, F.G., OBLOMEYEV, E.N. PA - 3025  
 TITLE: On the Mechanism of the Production of the Zirconium Fungus in the  
 Magnesia-Thermal Production Process of Zirconium. (O mekhanizme  
 obrazovaniya tsirkoniyevoy gubki pri magniyetermicheskom protsesse  
 polucheniya tsirkoniya, Russian)  
 PERIODICAL: Atomnaya Energiya, 1957, Vol 2, Nr 5, pp 459-462 (U.S.S.R.)  
 Received: 6 / 1957 Reviewed: 7 / 1957

ABSTRACT: First, two previous works are discussed in short. The present investi-  
 gation permits the following assumptions to be drawn concerning the  
 order and the mechanism of the production of the various parts of the  
 zirconium fungus: In the initial stage of the reduction process  
 chlorine zirconium (zirconium chloride) reacts with magnesia on the  
 surface of a molten magnesia vat. Reaction takes place mainly on the  
 walls of the vat. The zirconium produced at this moment absorbs the  
 admixtures of oxygen and nitrogen (zirconium is a good getter) from  
 the gaseous medium. The zirconium sinks to the bottom of the vat  
 where it forms the ground fungus; a small part of the zirconium re-  
 mains on the walls of the vat where it forms the lateral fungus. The  
 reaction of the magnesia vapors with the zirconium chloride in the  
 initial stage of the process can be inhibited if the heating of the  
 reaction vat with the magnesia remains comparable with the entering

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PA - 3025

On the Mechanism of the Production of the Zirconium Fungus in the Magnesia-Thermal Production Process of Zirconium.

of zirconium chloride (The last phrase is not clear, possibly because a word is missing in the original text. The reviewer). In the opposite case a black powder is formed ( $Zr + MgCl_2$ ). In the following stage the upper part of the fungus is produced. The growth of this part towards the top takes place more rapidly than the lifting of the level of the molten vat of metallic magnesia and magnesia chloride. Various circumstances indicate the following: The magnesia, by which the zirconium is well moistened, raises to the top as a result of the capillary effect of the zirconium fungus and develops on its highly developed surface with the vapors of the zirconium chloride, so that the zirconium fungus gradually and continuously grows towards the top. - The authors confirm this mechanism by using magnesia with a 3% aluminum content (or with a lower content of tin). The ideas discussed permit a better selection of the optimum temperature of the vat and the evaporator as well as an increase of the yield of high-quality zirconium fungus. (2 Illustrations and 1 Table).

ASSOCIATION: Not given  
PRESENTED BY:  
SUBMITTED: 14.11.1956  
AVAILABLE: Library of Congress  
Card 2/2



AUTHORS: Reshetnikov, F.G., Oblomeyev, Ye.N. 89-4-4.3/28

TITLE: The Investigation of the Velocity of the Magnesium-Thermic Process in Zirconium Production (Izucheniye skorosti magniyetermicheskogo protsessa polucheniya tsirkoniya)

PERIODICAL: Atomnaya Energiya, 1958, Vol. 4, Nr 4, pp. 349-353 (USSR)

ABSTRACT: The apparatus is described by means of which velocity of the magnesium-reduction process was investigated. The level of the melt  $MgCl_2 + KCl$  is measured by means of a  $\gamma$ -gauging device ( $Co^{60}$ ). The vapor pressure of zirconium chloride in the reduction apparatus was measured by means of an ordinary manometer. The manometer is connected with the interior of the reduction vessel by means of an opening- and closing device with liquid tin. Measurements showed that during evaporation (heating up to  $450^{\circ}C$ ), the temperature of zirconium chloride does not exceed  $330^{\circ}C$  during the magnesium-reduction process. The average velocity of the entire reduction process of zirconium chloride increases with a temperature increase in the crucible from  $700$  to  $850^{\circ}C$ , i.e. more slowly than with a temperature in-

Card 1/2

The Investigation of the Velocity of the Magnesium-Thermic  
Process in Zirconium Production

89-4-4-3/28

crease from 460 to 490°C.

The decisive factors in zirconium production therefore are the  
evaporation temperature and the vapor pressure of zirconium  
chloride. There are 5 figures, and 2 references.

SUBMITTED: May 29, 1957

1. Zirconium--Production
2. Zirconium--Temperature factors
3. Zirconium chloride--Reduction
4. Zirconium chloride--Vapor pressure
5. Magnesium--Thermal effects

Card 2/2

37988

S/089/62/013/001/003/012  
B102/B104

214200

AUTHORS: Reshetnikov, F. G., Gurvich, M. G.

TITLE: Mechanism whereby oxygen-containing uranium compounds exert a negative influence on the process and results of reducing uranium tetrafluoride by metallothermal means

PERIODICAL: Atomnaya energiya, v. 13, no. 1, 1962, 54-58

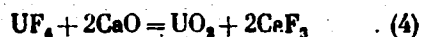
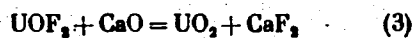
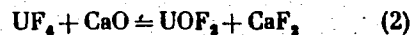
TEXT: An attempt is made to discover why oxygen-containing uranium compounds  $UO_2$  and  $UO_2F_2$ , if included in the mixture, exert a negative effect on uranium reduction by the use of magnesium or calcium. According to the initial composition and the method of  $UF_4$  production, the final product contains more or less of  $UO_2$  or uranyl fluoride, the latter being formed according to the equation  $UF_4 + H_2O + \frac{1}{2}O_2 = UO_2F_2 + 2HF$ . The presence of these oxides considerably reduces the uranium yield and favors the formation of heavy slags. This effect is shown to be related to the formation of "secondary"  $UO_2$  during the reduction process. For the reduction with  $CaO$

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Mechanism whereby oxygen-containing...

S/089/62/013/001/003/012  
B102/B104

the course of reduction is assumed to be given by



(the same holds for MgO). The oxyfluoride  $\text{UOF}_2$  which is formed has hitherto been unknown and the existence of this new phase was proved by X-ray study of the reaction product from (2). There are 5 figures.

SUBMITTED: November 23, 1961.

Card 2/2

USSR/Cultivated Plants. Technical Plants. Oil and M  
Sugar Learning Plants.

Abs Jour : Ref Zhur-Biol., No 15, 1958, 68265

Author : Reshetnikov, F. I., Kryshina, G. I.

Inst : -

Title : The Effectiveness of Liquid Ammonia Fertilizers  
during the Vegetation Period in Cotton.

Orig Pub : Sots. s. kh. Uzbekistana, 1957, No 6, 17-18

Abstract : On the basis of a field experiment conducted  
at the sovkhos ineni Fifth Anniversary in the  
UzSSR, it was determined that liquid ammonia  
is completely absorbed by the soil at the place  
of application. This fact makes it possible to  
apply it in the early period of the plant's  
development at a distance of 15-22 centime-  
ters from the row. Liquid ammonia had no ne-

Card : 1/2

USSR/Cultivated Plants. Technical Plants. Oil and M  
Sugar Bearing Plants.

Abs Jour : Ref Zhurn-Biol., No 15, 1958, 68265

gative effects on the cotton-ball formation  
or on the yield of raw cotton.

Card : 2/2

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1. LEVITOV, A. I.; RESHETNIKOV, F. K.; SLEPTSOV, V. A.
2. USSR (600)
4. Russian Literature - History and Criticism
7. The people's way of life and folk works in the democratic literature of the 1860's (A. I. Levitov, F. M. Reshetnikov, V. A. Sleptsov). I. M. Kolesnitskaya. Uch. zap. Len. un. no. 158, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

RESHETNIKOV, F.I.

Footwear industry of Kazakhstan. Kozh.-obuv.prom. 2 no.10:4-7  
0 '60. (MIRA 13:11)

(Kazakhstan--Shoe industry)



DOROSHENKO, P.G., inzh.; RESHETNIKOV, G.I.

Technical and economic analysis of methods of electric protection from corrosion. Stroi.truboprov. 7 no.9:28-30 S '62.

(MIRA 15:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po stroitel'stvu magistral'nykh truboprovodov (for Doroshenko). 2. Gosudarstvennyy proyektno-izyskatel'skiy institut po proyektirovaniyu elektrifikatsii dorog i energeticheskikh ustanovok (for Reshetnikov).

(Electrolytic corrosion)

RESHETNIKOV, G.I.

A universal portable cathodic protection apparatus using transistors.  
Avtom., telem.i sviaz' 6 no.5:30-33 My '62. (MIRA 15:4)

1. Nachal'nik proyektno-izyskatel'skoy ekspeditsii Gosudarstvennogo  
proyektno-izyskatel'skogo instituta po projektirovaniyu elektrifi-  
katsii dorog i energeticheskikh ustanovok.  
(Electric lines--Underground) (Electrolytic corrosion)

RESHETNIKOV, G.I.

Mobile electric-measurement laboratory on the UAZ-450 motor vehicle for the investigation of stray currents. Gaz. delo no.7: 28-31 '64. (MIRA 17:8)

1. Gosudarstvennyy ordena Trudovogo Krasnogo Znameni proyektno-izyskatel'skiy institut elektrifikatsii zheleznnykh dorog i energeticheskikh ustanovok Gosudarstvennogo proizvodstvennogo komiteta po transportnomu stroitel'stvu SSSR.

SHUMILICHNIK, Yu.S.; BLAGODIRAVOV, B.P.; KRAKOVSKIY, Ye.B.; RESHETNIKOV, G.K.

Interrelation of melting parameters in high capacity cupolas.  
Lit. proizv. no.1:15-17 Ja '65. (MIRA 18:3)

SUKHARCHUK, Yu.S.; BLAGONRAVOV, B.P.; RESHETNIKOV, G.K.

Interaction of technological parameters of melting in cupolas of  
various design. Lit. proizv. no.2:8-10 F '63. (MIRA 16:3)  
(Cupola furnaces--Design and construction) (Melting)

RESHETNIKOV, I.

"Across the forests and groves" by A.M.Ryzhikov. Reviewed by  
I.Reshetnikov. IUn.nat. no.1:33 Ja '63. (MIRA 16:1)  
(Nature study)  
(Ryzhikov, A.M.)

RASHEVSKIY, K.P., veterinarnyy vrach (Pereslavskiy rayon, Yaroslavskoy oblasti; RESHETNIKOV, I.M., veterinarnyy vrach (Pereslavskiy rayon, Yaroslavskoy oblasti)

Feeding of urea to milch cows. Veterinariya 38 no.10:66 0 '61.  
(MIRA 16:2)

(Pereslavl'-Zalesskiy District--Urea ad feed)

BILENKO, Zinovi, pisatel'; DIBENKO, Georgiy [Dybenko, Heorhii],  
kand.tekhn.nauk, master sporta SSSR.; RESHETNIKOV, Igor'  
[Reshetnykov, Ihor]

Saluting the Pioneer tie! Znan. ta pratsiia no.5:12-13 My '62.  
(MIRA 15:6)

1. Srednyaya shkola No.119 g. Odessy (for Reshetnikov).  
(Pioneers (Communist youth))



RESHETNIKOV, I.A., uchitel'

Flat projection of the human trunk on paper. Biol. v shkole  
no.4:85-88 J1-Ag '61. (MIRA 14:7)

1. Karamzinskaya vos'miletnyaya shkola Ul'yansvskogo rayona  
Ul'yansvskoy oblasti.

(Medicine--Audio-visual aids)

RESHETNIKOV, I.I.

BUROV, Petr Ivanovich; KAPUSTIN, Ivan Il'ich; VLADZIYEVSKIY, A.P., doktor  
tekhn.nauk, retsenznet; LEVIN, A.A., inzh., retsenznet; RESHETNIKOV,  
I.I., inzh., red.; TIKHANOV, A.Ya., tekhn.red.

[Calculating productive capacity of machine tools] Raschet proizvedi-  
tel'nosti rabochikh mashin. Moskva, Gos.nauchno-tekhn.izd-vo mashino-  
stroit. lit-ry, 1958. 213 p. (MIRA 11:7)  
(Machine tools)

RESHETNIKOV, I. M. and RASHEVSKIY, K. P. (Veterinary Surgeons, Pereiaslavsk  
Raion, Iaroslavl' Oblast')

"Feeding of milch cows with urea"

Veterinariya, Vol. 38, no. 10, October 1961, pp. 64

OGURTSOV, Anatoliy Il'ich, kand. tekhn. nauk; KANDALOV, I.I., prof.,  
doktor tekhn. nauk, retsenzent [deceased]; RESHETNIKOV,  
K.A., dots., retsenzent; SHERSHUKOVA, M.A., ~~retsenzent~~;  
~~SHERSTNEVA~~, N.V., tekhn. red.

[Hydraulic fill methods for building earth dams] Namyv zem-  
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izdat, 1963. 366 p. (MIRA 16:8)  
(Dams) (Dredging)

Colloid-chemical character of mixtures of cements and the method for determining the best relations between the composition of the components. M. A. Rehbinder. *Colloid J.* (U. S. S. R.) 1, 525-40 (1935). — The mixture of cement with organic solvents, the effects of concn. of  $H_2O$ , of relative proportions of various components, of addn. of benzene,  $Cl_2$  and  $NH_3$  on the heats of wetting, the activity of the hydraulic components, the stability of the suspensions and the strength of the final product are discussed and illustrated by data on various cements, stuccoes, etc. Building cements must be composed of relatively coarsely dispersed particles of components bearing opposite elec. charges. Mutual coagulation takes place to produce an agglomerate near the isoelec. point. Solidification is conditioned by chemisorption and reaction leading to microcrystal formation depending upon the surface properties of the components. F. H. Natthmann



Effect of the temperature of roasting on the  $\zeta$ -potential of tripoli and clay. M. M. Mordukhai-Nikol'skiy, *Colloid J.* (U. S. S. R.) 8, 523-9 (1937).--The electrokinetic potential ( $\zeta$ ) with respect to water increases linearly with the roasting temp. App. and mode of operation are described. John Livak

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
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<p><i>ca</i></p> <p><i>20</i></p> <p>A new method for the determination of porosity in structural materials. M. A. Reshetnikov and A. P. Trupani. <i>Proc. Soviet. Metall.</i> 1941, No. 5, 5-10; <i>Chem. Zvest.</i> 1942, II, 2637.—The authors describe a new method and the app. used to det. the porosity, especially in water-repellent material. Essentially, a vessel is used which is similar to a pycnometer in which the material is introduced. The tests are made by adm. of Hg and with varying air pressure; both are measured. J. M. Nuy</p>																																																			
<p>650-55.6 METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			
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1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
<p><i>ca</i></p> <p>Preventing formation of rings in rotary cement man.  V. V. Surov and M. A. Rachevskiy. <i>Tsvetmet</i> 18, No.  2/3, 16-18(1944).—Ring formation was prevented by  keeping the ratio of <math>Al_2O_3:SiO_2</math> in the charge not over 1.2.  To prevent corrosion of the kiln lining, the ratio should not  be less than 1.1. M. Hosh</p>																			
<p>ASB-15A METALLURGICAL LITERATURE CLASSIFICATION</p>																			
FROM SYNONYM										FROM SYNONYM									
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RESHEPNIKOV, M. A.

Mbr., Inst. General & Inorganic Chemistry im. N. S. Kurnakov; Dept. Chem. Sci., Acad. Sci., -c1949-. "The Apparent Partial and Molar Quantities during Variation of the Property of a Solution According to the General Rule of Mixtures," Dok. AN, 69, No. 1, 1949. "The State of the Equilibrial Gas Phase of a Binary Solution and Van der Vaals' Equation," Dok. AN, 68, No. 3, 1949; "A Generalized Equation of Additivity for Variations in the Properties of a Binary Solution," ibid., No. 4, 1949.

C.A.

2

Equation of the isotherm of the properties of normal binary systems. M. A. Bakhvalov. *Izv. Akad. Nauk S.S.S.R. Ser. Khim. Anal. Inst. Obshch. i Neorg. Khim., Akad. Nauk S.S.S.R.* 10, 165-78 (1940); cf. C.A. 44, 1700. The general equation derived is:  $\sigma = [\omega_1(1-Y)^2 + \omega_2K^2Y^2 + (\omega_1 + \omega_2 + \omega_1K^2Y(1-Y) + \omega_2K^2Y(1-Y))] / [(\omega_1 + \omega_2 + 2)KY(1-Y)]$ , where  $\sigma$  is the specific property of the soln.,  $\omega_1$  and  $\omega_2$  are the properties of component 1 and 2, resp.,  $Y$  is the relative wt. of component 1,  $K = \omega_1/\omega_2$ , where  $\omega$  is the statistical wt. of the components, and  $\omega_1$  and  $\omega_2$  are derived from the equation  $\delta = \omega_1 + \omega_2 + 2$ , where  $\delta_{12} = \delta_{12}^{(12)}$ ; the subscript 12 designates perturbation to components 1 and 2. In this equation compn. of the soln. can be expressed in any units. M. Hosh.

C.A.

2

General equation for the additivity of properties of binary liquid systems when the concentration is expressed in different manners. M. A. Reshetnikov. *Izv. Akad. Nauk S.S.S.R. 19, 174-81 (1949)*.—A series of equations are derived for cases where the concn. of a soln. is expressed in various terms. M. Hensch

2

equilibrium composition of the gas phase of a binary solution and the van der Waals equation. M. A. Khrushchikov (Acad. Sci. U.S.S.R., Moscow). *Doklady Akad. Nauk S.S.S.R.* 68, 531-4(1940).—The relation  $N_1'' = N_1' + [N_1'(1 - N_1')/P](dP/dN_1')$  between the mole fractions of component 1 in the gas ( $N_1''$ ) and in the liquid phase ( $N_1'$ ), derived by van der Waals from the rigorous equation with the simplifications  $V'' - V' = RT/P$  and  $\partial V'/\partial N_1' = 0$ , and consequently considered to be only approx., is shown to be actually rigorous if the derivation starts with the satd. vapor pressure at const. temp. being a homogeneous zero-order function of the amts.  $n_1$  and  $n_2$  of the components. If the vapor pressure  $P = f(n_1, n_2)$  is multiplied by  $(n_1 + n_2)$ , one has, through Euler's theorem,  $G = P(n_1 + n_2) = n_1(\partial G/\partial n_1) + n_2(\partial G/\partial n_2)$ , and, in mole fractions ( $N$ ),  $P = N_1'(\partial G/\partial n_1) + N_2'(\partial G/\partial n_2)$ , or  $P = N_1'\bar{P}_1 + N_2'\bar{P}_2$ , with  $\bar{P} = \partial G/\partial n$ . For the mole fraction  $N''$  in the gas phase,  $N_1'' = N_1'\bar{P}_1/(N_1'\bar{P}_1 + N_2'\bar{P}_2)$  and  $N_2'' = N_2'\bar{P}_2/(N_1'\bar{P}_1 + N_2'\bar{P}_2)$ . On the other hand, if  $P$  is expressed as a function of  $N_1'$  alone,  $P = \phi(N_1')$ , and is multiplied by  $(n_1 + n_2)$ , then  $\partial G/\partial n_1 = P + (1 - N_1')(dP/dN_1')$ . Combination of the two equations gives the van der Waals relation quoted at the outset, but derived without any simplifying assumptions. Consequently, the simplifications underlying the van der Waals equation are only apparent. There are, however, two actual limitations: it is understood that the mol. wt. of the components in the liquid and the gas phase is identical, and that the analytically detd. amts. of moles of components are identical with their effective amts.

N. Thon

1957

The generalized additivity equation for the change of properties of a binary solution. M. A. Kabanikhov. *Doklady Akad. Nauk S.S.S.R.* 68, 719-722 (1949) (cf. C.A. 64, 1208a). —Since the total amt. of components of a binary system is a homogeneous function of the units of the components, irrespective of the expression of the compn.,  $\phi = f(m_1, m_2)$ , the characteristic fraction of the 1st component is  $N_1 = m_1(\partial\phi/\partial m_1)/[m_1(\partial\phi/\partial m_1) + m_2(\partial\phi/\partial m_2)]$ , with the corresponding expression for  $N_2 = 1 - N_1$ . With the "characteristic coeff." of a component defined as  $\theta = \partial\phi/\partial m$ , and  $K = \theta_1/\theta_2$ , one has  $N_1 = m_1/(m_1 + Km_2)$  and  $N_2 = Km_2/(m_1 + Km_2)$ . In terms of the  $N$ , Raoult's vapor-pressure law for ideal solns. is written  $P = P_1N_1 + P_2N_2$ . Any property  $s$  will be expressed by  $s = s_1N_1 + s_2(1 - N) = [s_1y + s_2K(1 - y)]/[y + K(1 - y)]$  (equation I), where  $y = m_1/(m_1 + m_2)$ ; that is the generalized law of additivity valid for any expression of the compn. The const.  $K$ , determinable from capil. data by  $K = (s - s_2)m_1/(s_1 - s_2)m_2$ , depends on the particular expression of the compn.; its numerical value, and only that, changes for the reciprocal  $z = 1/s$  of the property  $s$ , specifically,  $K_z = (s_1/s_2)K$ . All functions which, by an appropriate choice of the expression of the compn. (wt., vol., or mole %), or by the device of the reciprocal, can be represented by a straight line, are special cases of I; the phys. meaning of  $K$  is brought forth by the nature of the capil. data. Irrespective of the expression of the compn., one has, at the limits of infinite diln.,  $\tan \alpha, \tan \beta = (s_1 - s_2)^2$  (II), where  $\tan \alpha$  and  $\tan \beta$  are  $(ds/dy)$  at the limit  $y = 0$  and  $y = 1$ , resp. In other words, the slopes at the 2 limits are different, but their product is independent of the expression of the compn.; II is a criterion of additivity. Equation I, generally, represents a family of hyperbolas corresponding to different values of  $K$ , with a straight line for  $K = 1$ ; if the compn. is expressed in terms of  $N$ , all curves become a straight line. Combination of the Duhem-Lewis equation for the activity coeff.  $\gamma$  of the components of a binary system,  $[yds_1/dy] + [(1 - y)ds_2/dy] = 0$ , with equation I, giving  $\gamma_1 = 1/[y + K(1 - y)]$  and  $\gamma_2 = Ky_1$ , shows it to be valid only for  $K = 1$ . N. Thon

2

CA

Apparent, partial, and molal magnitudes in property changes of solutions, by the generalized rule of mixing. M. A. Kabanov. *Doklady Akad. Nauk S.S.S.R.* 26, 478 (1949).—A property  $\phi$  of the soln. is related to the properties  $\phi_1$  and  $\phi_2$  of the components by  $\phi = (\phi_1 m_1 + \phi_2 K m_2)/(m_1 + K m_2) = [\phi_1 y + \phi_2 K(1-y)]/[y + K(1-y)]$ , where  $m_1$  and  $m_2$  are the mols. in wt.,  $y$  and  $(1-y)$  are the wt. fractions,  $K$  a const. equal to the ratio of the characteristic curvls. In terms of the "characteristic fractions" of the components,  $N$  and  $(1-N)$ , defined by  $N = y/[y + K(1-y)]$  and  $(1-N) = K(1-y)/[y + K(1-y)]$ , the expression becomes  $\phi = \phi_1 N + \phi_2 (1-N)$ . In this system, the apparent sp. magnitudes,  $\phi$ , become  $\phi_1 = \phi_1$  and  $\phi_2 = \phi_2$ , and the sp. partial magnitudes,  $\phi_1$  and  $\phi_2$ , are  $\phi_1$  and  $\phi_2$ . This holds only if the compns. are expressed in terms of  $N$ , not in other units, except when  $K = 1$ . Passage from one system of expression of the compn.,  $x$ , to another system,  $s$  (e.g. from wt. fractions to vol. fractions) is governed by the equations  $s = x/[x + K(1-x)]$ ,  $K(1-x)$  and  $(1-s) = K(1-x)/[x + K(1-x)]$ , with the value of  $K$  changing from one system to another; partial magnitudes transform from  $x$  to  $s$  by  $\phi_s = \phi_x + (K-1)(1-x)(d\phi/dx)$ . The expression for a molal property of the soln.,  $\Phi = \phi_1 a + \phi_2 (1-a)$ , where  $a$  and  $(1-a)$  are the mole fractions, is applicable only in the particular case when the mean analytical mol. wt.  $M$  of the soln. coincides with its mean effective mol. wt.  $M_e$ , i.e.  $K = 1$ ; in the general case,  $K \neq 1$ , and  $M_e = M + (K-1)M_2(1-a)$ . Hence, the mean effective  $\Phi_e = [\phi_1 M + K \phi_2 (1-a)] = \phi_1 a + \phi_2 K(1-a)$ ; if a sp. property is linked with the wt. fraction of a component by the generalized rule of mixing, the effective molal property of the component is a linear function of the analytical mole fraction. N. Thon

2

CA

Effective partial molar pressure and equilibrium composition of the gas phase of a binary solution. M. A. Rabinovich (Acad. Sci. U.S.S.R., Moscow). *Doklady Akad. Nauk S.S.S.R.* 78, 721-4 (1950); cf. preceding abstr.—In the case of nonfulfillment of the condition of the constancy of the mol. wt. of the components, the previous equations remain valid if the mole fraction  $N$  is replaced by the characteristic component fraction  $N_s = y/(y + b(1 - y))$ , where  $y$  = fraction of component (in any expression), and  $b$  is detd. from exptl. data. Where internal forces give rise to an addnl. no. of components, i.e. where the effective no. of

components is different from the analytically given no., the equations  $\bar{P}_i = P + (1 - N_s)(dP/dN_s)$  and  $\bar{P}_i = P - (N_s dP/dN_s)$  are not valid. Let a binary system of A and B form a pseudoternary system AA, BB, and AB, in the amts.  $m_1$ ,  $m_2$ , and  $m_3$ ; the sum  $m_1 + m_2 + m_3$  is termed the effective no. of components. Application of Raoult's theorem to  $G' = P(m_1 + m_2 + m_3)$  leads to  $\bar{P}_i' = \bar{P}_i + [m_3/(m_1 + m_2 + m_3)](1 - N_s)(dP/dN_s)$  and  $\bar{P}_i' = \bar{P}_i - [m_3/(m_1 + m_2 + m_3)]N_s(dP/dN_s)$ , and further to  $P = (1 - N_s)\bar{P}_i' + N_s\bar{P}_i'$ ,  $N_s' = N_s\bar{P}_i'/P$ , where the primed symbols refer to the pseudo-ternary system; for  $m_3 = 0$ , these equations go over into those (quoted at the outset) derived for the case of unchanged no. of components. For the pseudoternary system, the expression of the change of the vapor pressure with the compn. can be written  $P' = P_1' + (P_2' - P_1')(H/B)$ , with  $A = m_2 + [m_1 m_2/(m_1 + m_2)]$ ,  $B = m_1 + m_2 + [(m_1 + m_2)m_3/(m_1 + m_2)]$ ,  $P_1'$  and  $P_2'$  being the vapor pressures of the pure initial components, and  $m_1$  and  $m_2$  are detd. from exptl. data. This gives  $m_3 = (m_1 + m_2)m_3/(m_1 + m_2)$ , and, finally,  $N_s' = N_s\bar{P}_i'/P = N_s + N_s(1 - N_s)(dln P'/dN_s) + (m_1 + m_2)N_s(1 - N_s)(dln P'/dN_s)$  which permits detn. of the compn. of the gas phase for any given compn. of the liquid phase. The existing equations of Margules, van Laar, Hildebrand, are all of the form  $\bar{P}_i' = P_i + (1 - N_s)(dP/dN_s)f(m_1, m_2, y)/(m_1 + m_2)$  and differ only by the form of the function  $f$ . The present formulation  $f = (m_1 + m_2)N_s(1 - N_s)P$  has the advantage of being obtainable from exptl. data. N. Thun

1957



RESHETNIKOV, M. A.

"Classification of Nonsingular Curves of N. A. Kurnakov and the Equation of the Isotherm of Properties of Binary Systems"  
Izv. Sektora Fiz. Khim. Akad. Nauk SSSR, 23, 1953, pp 9-12

Previously (ibid., 19, 165 (1949)) the author obtained, proceeding from the probabilities of combinations of molecules of components of a binary single-phased system of the type AA, BB and  $AB = BA$ , the isotherm equation with three characteristics constants. These constants and the family of non-singular curves responding to various values of these constants are analyzed. The properties of diluted solutions should be predictable from the isotherm equation. (RZhFiz, No 11, 1954)

SO: W-31187, 8 Mar 55

RESHETNIKOV, Mikhail Aleksandrovich (Inst of General and Inorganic Chem im Kurnakov, Acad Sci USSR) for Doc Chem Sci on the basis of dissertation defended 22 Oct 58 in Council of Mos Order of Lenin Chem Technological Inst im Mendeleyev, entitled "Equation of the isotherm of properties of double irrational systems."  
(BMVISO USSR, 1-61, 26)

-223-

RESHETNIKOV, M.A.

Certain questions concerning the Van der Waals and Lewis isothermal equilibrium between solution and vapor. Zhur.fiz. khim. 34 no.1:212-215 Ja '60. (MIRA 13:5)

1. Akademiya nauk SSSR. Institut obshchey i neorganicheskoy khimii imeni N.S.Kurnakova.

(Phase rule and equilibrium) (Solution(Chemistry))

AUTHOR: Reshetnikov, M. A. 76-32-4-37/43

TITLE: On the Article by Yu. S. Varshavskiy, A. Ye. Kipnis and A. B. Sheynin "On the Composition of the Equilibrium Gas Phase Above a Binary Solution and on the Van der Waals Equation" (On the Paper by M. A. Reshetnikov) (O stat'ye Yu. S. Varshavskogo, A. Ya. Kipnisa i A.B. Sheynina "O sostave ravnovesnoy gazovoy fazy nad binarnym rastvorom i ob uravnenii Van-der-Vaal'sa (Po povodu stat'i M.A.Reshetnikova)"

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 4, pp. 945-948 (USSR)

ABSTRACT: According to a critical comment of the author the authors mentioned in the title maintain, among other, that his contribution was a proof of a futile dealing with thermodynamical problems in a non-thermodynamical way. The equation formed by Reshetnikov, which is similar to that by Van der Waal and is valid for all concentrations of binary systems, was changed by the authors mentioned in the title and was put into a new form. In the present paper a number of mathematical equations and explanations are to prove that the above mentioned new form of an equation for infinitely diluted and ideal solutions was developed on the basis of an incorrect consideration of

Card 1/2

On the Article by Yu. S. Varshavskiy, A. Ye. Kipnis and A.B. Shey- 76-32-4-37/43  
nin "On the Composition of the Equilibrium Gas Phase Above a Binary Solution  
and on the Van der Waals Equation (On the Paper by M. A. Reshetnikov)"

Van der Waal's equation. The authors mentioned in the title  
are said not to have understood the thermodynamical sense and  
the application of the magnitude of "molar partial pressure"  
in Reshetnikov's work and that they therefore committed their  
wrong explanations; it is also maintained that their statement  
of the "methodological errors" of formalism was out of  
question. There are 3 references, all of which are Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova,  
AN SSSR, Moskva (Moscow Institute for General and Inorganic  
Chemistry imeni N. S. Kurnakov, AS USSR)

SUBMITTED: November 27, 1957

AVAILABLE: Library of Congress

1. Solutions--Theory 2. Solutions--Thermodynamic properties

Card 2/2

USGR / Microbiology. Human and Animal Pathogens.  
Bacteria of Intestinal Group.

F

Abs Jour: Ref Zhur-Biol., No 2, 1959, 5577.

Author : Roshetnikov, M. S.

Inst : Not given.

Title : Observations on Epidemiological Effectiveness  
of Immunization Against Dysentery.

Orig Pub: Voen. med. zh., 1958, No 3, 53-54.

Abstract: No abstract.

Card 1/1

43

RESHETNIKOV, M.S., podpolkovnik med. sluzhby

Observations on the epidemiological effectiveness of immunization  
against dysentery. Voen. med. zhur. no.3:53-54 Apr '58. (MIRA 12:7)  
(DYSENTERY, BACILLARY, immunol.  
vacc., effectiveness (Rus))

RESHETNIKOV, N., Captain, propagandist politotdel

The layout of visual propaganda in military units. Komm.  
Vooruzh. Sil 1 no.1:81-84 O '60. (MIRA 14:7)  
(Russia--Armed ~~forces~~—Political activity)



1ST AND 2ND ORDERS		PROCESSING AND PROPERTIES INDEX	
RESHETNIKOV, N. A.		20	
<p>Concrete from activated ash. N. A. Reshetnikov.  Prom. Nizhnel. Material. 2, No. 10-11, 02-3(19:0)---A  mixture of dry boiler ash and slaked lime in the ratio 10:1  was activated with portland cement (5%) and <math>CaCl_2</math> (3%).  The crushing strength of the concrete obtained was 80  kg./sq. cm., the vol. weight 1.5 tons/cu. m., the water  capacity 23%.  E. E. Stepanovsky</p>			
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION			
1ST AND 2ND ORDERS		1ST AND 2ND ORDERS	

YUDIN, V.V., doklady, kandyd. nat. nauk; KOSHECHIKOVA, N.V., aspirant

Ustav nauchnykh issledovaniy po fertilizatsii, izv. VASKH no.1:92-104  
1964. (MIRA 17:4)

3. Naftena agrotimil i biokhimi! Voskovskoy ordena Lenina bel-  
lorusskiy nauchnyy akademi! imeni Timiryazeva.

NIKIFOROVA, V.M., kand. tekhn. nauk; RUSHETKINA, N.A., inzh.

Investigation of corrosion cracking of steam turbine disks. *Energo-*  
*mashinostroenie* 3 no.10:19-22 0 '57. (MIRA 10:12)  
(Steel--Metallography) (Steam turbine disks)

RESHETNIKOV, N., gvardii podpolkovnik

Sniper training. Voen. vest. 39 no.9:81-82 S '59.

(MIRA 12:12)

(Snipers)

RECHERCHES, N.A.

Complex formation during the crystallization of fused salts.  
Zhur. neorg. khim., 9 no.3:2200-2202, 1964.

(U.S.S.R.)

PA 227T15

RESHETNIKOV, N. A.

USSR/Chemistry - Lithium Compounds

1 Aug 52

"Irreversible Mutual System of Potassium and Lithium Chromates and Hydroxides," N. A. Reshetnikov, G. G. Diogenov

"Dok Ak Nauk SSSR" Vol 85, No 4, pp 819-822.

The solid soln of  $\text{Li,KOH}$ ,  $\text{CrO}_4$  was investigated and polytherms constructed. The work refers to a series of investigations undertaken for the systematic investigation of alkali-salt exchange without a solvent. This research was completed at the Chair of Gen Chem, Irkutsk Med Inst. Presented by Acad G.G. Urazov 2 Jun 52.

227T15

Irreversible reciprocal system of sodium and lithium chromates and hydroxides. *N. G. Rzhetsnikoy and G. G. Diogenov (Irkutsk Med. Inst.). Zhurnal Sibirsk. Khim., Akad. Nauk S.S.S.R. 1, 112-25 (1953).*—The reciprocal system  $\text{Li, Na || OH, CrO}_4$  was deduced from 2 diagonal and 20 internal cross sections and the 4 binaries. The data are given in 24 tables and 11 diagrams. The binaries  $\text{Li}_2(\text{OH})_2\text{-Na}_2(\text{OH})_2$  (a) and  $\text{Li}_2(\text{OH})_2\text{-Li}_2\text{CrO}_4$  (b) were detd. for the first time; the binaries  $\text{Na}_2(\text{OH})_2\text{-Li}_2\text{CrO}_4$  (c) and  $\text{Li}_2\text{CrO}_4\text{-Na}_2\text{CrO}_4$  (d) were redetd. In a there are 3 transition points at 254, 238, and 209° with 67, 7, and 94.5 mol. % NaOH; 2 compds. of uncertain compn. In b there are 2 congruent compds.  $4\text{LiOH}\cdot 3\text{Li}_2\text{CrO}_4$  and  $\text{LiOH}\cdot \text{Li}_2\text{CrO}_4$ , m.p.s. 430 and 400°, resp.; a eutectic at 318° and 2 transition points at 427 and 450° with 45, 04, and 78%  $\text{Li}_2\text{CrO}_4$ . In c the polymorphic transition of  $\text{Li}_2\text{CrO}_4$  at 440° is underscored; a congruent compd.  $\text{Li}_2\text{CrO}_4\cdot \text{Na}_2\text{CrO}_4$ , m. 412°, and 2 transition points at 383 and 408° with 31.5 and 53.5%  $\text{Na}_2\text{CrO}_4$ . In d there are 4 transition points at 304, 300, 330, and 415° with 4.5, 8.0, 35, and 53%  $\text{Na}_2\text{CrO}_4$ ; 2 compds.  $4\text{NaOH}\cdot \text{Na}_2\text{CrO}_4$  and  $2\text{NaOH}\cdot \text{Na}_2\text{CrO}_4$ , m.p.s. 346 and 423°, resp. The chromate branch above 580° was not investigated. The stable diagonal  $\text{Li}_2(\text{OH})_2\text{-Na}_2\text{CrO}_4$  (I) is characterized by a series of solid solns. with a min. m.p. at 410° (this contradicts established rules of isomorphism and further investigations will be made). The unstable diagonal  $\text{Na}_2(\text{OH})_2\text{-Li}_2\text{CrO}_4$  is an irregular curve with 8 branches intersecting at 300, 202, 280, 321, 244, 340, and 440°. The reaction of the system is expressed by expression  $2\text{NaOH} + \text{Li}_2\text{CrO}_4 \rightleftharpoons 2\text{LiOH} + \text{Na}_2\text{CrO}_4$ ;  $\Delta H = -14.6$  kcal. The equil. is shifted toward the stable pair at the left, which justifies the classification of this reciprocal system as irreversible. In the stable triangle  $\text{Li}(\text{OH})\text{-Na}(\text{OH})\text{-Na}_2\text{CrO}_4$  there are 3 fields of crystn.:  $\text{LiOH}\cdot \text{NaOH}$ ,  $4\text{NaOH}\cdot \text{Na}_2\text{CrO}_4$ , and  $2\text{NaOH}\cdot \text{Na}_2\text{CrO}_4$  with 0.47, 7.44, and 4.68% of the projected area, resp.; 3 transition points at 228, 270, and 304°, and a eutectic at 221°. In the stable triangle  $\text{Li}(\text{OH})\text{-Li}_2\text{CrO}_4\text{-Na}_2\text{CrO}_4$  there are 6 fields of crystn.:  $4\text{LiOH}\cdot 3\text{Li}_2\text{CrO}_4$ ,  $\text{LiOH}\cdot \text{Li}_2\text{CrO}_4$ ,  $\text{Li}_2\text{CrO}_4$ ,  $4\text{LiOH}\cdot \text{Na}_2\text{CrO}_4$ ,  $3\text{Li}_2\text{CrO}_4$ , and the field  $\text{Li}_2\text{CrO}_4\cdot \text{Na}_2\text{CrO}_4$  which is divided by the line of polymorphic transformation into  $\alpha$  and  $\beta$ - $\text{Li}_2\text{CrO}_4$  (the resp. areas are: 1.43, 1.23, 3.80, 0.10, 2.32, and 4.35%); and 6 eutectics at 342, 317, 347, 342, 337, and 340°.

I. Rzhetsnikoy

KESHETNIKOV, N. A.

USSR.

Thermographic investigation of binary systems containing  
potassium and sodium hydroxides and potassium and sodium  
hydroxides. N. A. Keshetnikov and G. M. Ushakov  
Izv. Akad. Nauk SSSR, Ser. Khim., 1954, No. 1, 5-9 (1953); Referat. Zhur., Khim., 1954,  
No. 4896. The system NaOH-KOH had a eutectic with  
a limited sol. in the solid phase. The eutectic point was at  
80 mole% KOH and 170°. In the system LiOH-KOH  
was found an incongruently melting compd. 2LiOH-KOH  
which formed limited solid soln. with its component. The  
eutectic point (solid soln. of 2LiOH-KOH and KOH) was at  
227° and the transition point at 314°. M. Hensch

①

guc



*Peshetnikov, N. A.*

USSR.

ternary system of lithium chloride, carbonate, and sulfate. N. A. Peshetnikov and G. G. Dobysonov. *Izvest. Fiz.-Khim. Nauch.-Issledovatel. Inst. Tekhn. Univ.* 2, No. 1, 14-16 (1953); *Referat. Zhur., Khim.* 1954, No. 40868. The ternary system  $\text{Li} \parallel \text{Cl}, \text{CO}_3, \text{SO}_4$  was studied by visual polythermal methods. The liquidus diagram of the system had 3 fields of crystn. of the components. The ternary eutectic point was at  $-55^\circ$  and compn.  $\text{Li}_2\text{Cl}_2$  33 and  $\text{Li}_2\text{CO}_3$  27 mole %. The eutectic of the system  $\text{LiCl}-\text{Li}_2\text{CO}_3$  was at  $507^\circ$  and 61 mole %  $\text{LiCl}$ .  
M. Hosen

CH

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*[Handwritten signature]*

~~RESHETNIKOV~~ RESHETNIKOV, N.A.

7  
 The shift of equilibrium in exchange reactions. N. A. Reshetnikov. *Izvest. Fiz. Khim. Nauch.-Issledovatel. Inst. Khim. Gosudarst. Univ. L.* No. 1, 17-22 (1955). *Referat. Zhur., Khim.* 1956, Abstr. No. 28404. — On the basis of the analysis of exptl. material obtained by R. on alkali-salt reaction systems it is shown, that the magnitude and the direction of the shift of equil. in double decomps. in the absence of a solvent is detd. by the value and the sign of the algebraic sum of the cryst. lattice energies of the components of the exchange reaction. The greater the difference in the radii of cations in a series of systems with the same anion, or the greater the difference in the radii of anions in a series of systems with the same cation, the farther the exchange equil. is shifted. L. Krell

11  
 Distr: 4Elj

USSR

✓ Invariant reciprocal system of lithium and potassium  
bromides and hydrides. N. A. [unclear] and G. M.  
[unclear]. Izv. Akad. Nauk SSSR, Ser. Khim., 1964,  
No. 1, 23-30 (1965); KONG. ZH. KHIM., 1964,  
No. 40, 4018; cf. C.A. 47, 4046. — The system diagram  
of the system Li, K || Cl, Br had 9 crystals. Solids, among  
which were crystals. Fields of pure components and crystals  
fields of the compounds: KBr, KBr, KBr, LiBr, and KBr.  
KBr.

pc SRI ISU in AA268

Reshetnikov, W.A.

✓ Reaction of caustic alkalis with nitrates and nitrites of sodium and potassium. A. G. Bergman and W. A. Reshetnikov. *Izv. Akad. Nauk S.S.S.R. Khim. Anal.*, 1964, No. 1, 208-17 (1964).  
 Study of solubility confirms formation of compds.  $2\text{NaOH} \cdot \text{NaNO}_3$ ,  $\text{NaOH} \cdot \text{NaNO}_3$ ,  $\text{KOH} \cdot \text{KNO}_3$ ,  $\text{NaOH} \cdot \text{NaNO}_2$ , and  $\text{KNO}_3 \cdot \text{KOH}$  by reaction of alkalis with nitrates and nitrites. These compds. melt congruently at 272, 271.5, 230.5, 206, and 177°, resp. They might be considered as acid salts  $\text{Na}_2\text{H}_2\text{NO}_6$ ,  $\text{Na}_2\text{HNO}_6$ ,  $\text{K}_2\text{HNO}_6$ ,  $\text{Na}_2\text{HNO}_5$ , and  $\text{K}_2\text{HNO}_5$ .  $\text{KOH}$  and  $\text{NaNO}_3$  (or  $\text{NaOH}$  and  $\text{KNO}_3$ ) do not react with each other but form a series of solid solns. Vapors of  $\text{KOH}$  and  $\text{NaNO}_3$  (or  $\text{KOH}$  and  $\text{NaNO}_2$ ) enter into an exchange reaction. Pure  $\text{NaOH}$ , m.  $321 \pm 1^\circ$ , and  $\text{KOH}$ , m.  $404 \pm 1^\circ$ , were obtained by action of  $\text{H}_2\text{O}$  on the metals.  
 Eurilla Mayrle

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**AUTHORS:**

*Reshetnikov, N. A., Vilutis, N. I.*  
Reshetnikov, N. A., Vilutis, N. I.

78-2-18/43

**TITLE:**

I. The Fusion Diagrams of Some Double Systems of Hydroxides and Salts of the Alkali Metals (I. Diagrammy plavkosti nekotorykh dvoynykh sistem iz gidrookisey i soley shchelochnykh metallov)

**PERIODICAL:**

Zhurnal Neorganicheskoy Khimii, 1958, Vol. 3, Nr 2, pp. 366-377 (USSR)

**ABSTRACT:**

The authors treated the problem of the formation of complexes (no difference is made between complex-formation and double salts) between hydroxides and salts of the alkali metals in an anhydrous system. Ions which have a high polarizing effect and possess a small ionic radius show a tendency to complex-formation in double systems with general cations and various anions. The anions  $F^-$ ,  $OH^-$  and  $O^{2-}$  show a tendency to complex-formation, as they have a higher polarizing effect. The cations with a higher polarizing effect also favorably influence the complex-formation. In this work the melts of the above-mentioned systems were investigated by simple and by differential analysis. The following thermographic investigations were performed: 1. The system  $KOH-KNO_3$ . In this system the chemical

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I. The Fusion Diagrams of Some Double Systems of Hydroxides  
and Salts of the Alkali Metals

78-2-18/43

compound  $\text{KOH.KNO}_3$  which possesses a melting point of  $236^\circ \text{C}$  was determined from the fusion diagram. The formation of solid solutions is not out of the question either. 2.  $\text{NaOH-NaNO}_2$ . In this system the chemical compound  $\text{NaOH.NaNO}_2$  with a melting point at  $266^\circ \text{C}$  was determined from the fusion diagram. The formation of solid solutions was not discovered in this system. The values for the temperature of the polymorphous transformation of sodium hydroxide / $300^\circ \text{C}$ / and sodium nitrite / $160^\circ \text{C}$ / correspond to the values given in publications. 3. The system  $\text{K}_2\text{OH}_2\text{-K}_2\text{CrO}_4$ . In this system the formation of compounds of the following composition is not impossible:  $\text{KOH.K}_2\text{CrO}_4$ ,  $\text{KOH.2K}_2\text{CrO}_4$ ,  $2\text{KOH.3K}_2\text{CrO}_4$ . 4. The system  $\text{NaOH-KNO}_3$ . The formation of solid solutions was determined from the fusion diagram of this system. This may probably be explained by the fact that large parts of the crystal-structure of one component are replaced by the second component. There are 6 figures, 6 tables, and 33 references, 16 of which are Slavic.

SUBMITTED:  
AVAILABLE:  
Card 2/2

February 20, 1957  
Library of Congress

AUTHORS: Reshetnikov, N. A., Unzhakov, G. M. 78-3-6-23/30

TITLE: The Melting-Point Diagrams of the LiOH-LiCl and LiOH-NaOH  
(Diagrammy plavkosti sistem LiOH-LiCl, LiOH-NaOH)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol. 3, Nr 6,  
pp. 1433-1438 (USSR)

ABSTRACT: Investigations of the Binary Systems LiOH-LiCl and  
LiOH-NaOH were carried out.  
Double compounds are formed in these systems.  
The melting-point curves and the cooling curves of these  
systems were investigated by thermographic analysis.  
The following compounds were formed in the LiOH-LiCl-  
system at 300°C: 3 LiOH . 2 LiCl and an incongruent  
meltable compound LiOH . LiCl.  
Solid solutions with relatively high saturation  
(approximately 25 mol % NaOH) are formed in the LiOH . NaOH-  
system.  
The incongruent meltable compounds NaOH . 3 LiOH and  
LiOH . NaOH are formed in these systems also at 248°C.

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The Melting-Point Diagrams of the LiOH-LiCl and  
LiOH-NaOH

78-3-6-23/30

There are 3 figures, 2 tables, and 10 references, 3 of which  
are Soviet

SUBMITTED: May 9, 1957

AVAILABLE: Library of Congress

1. Lithium chloride-lithium hydroxide systems--Phase studies
2. Lithium hydroxide-sodium hydroxide systems--Phase studies

Card 2/2



SOV/78-4-1-24/48

5(4)

AUTHORS:

Reshetnikov, N. A., Vilutis, N. I.

TITLE:

The Ternary System of Hydroxides of Lithium, Sodium, and Potassium (Troynaya sistema iz gidrookisey litiya, natriya i kaliya)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 1, pp 123-131 (USSR)

ABSTRACT:

The binary systems NaOH-KOH, LiOH-KOH, and LiOH-NaOH were investigated and partly improved. The system LiOH-KOH was investigated for the first time and it was found that the addition of lithium ions to the binary system often causes complex formation. An incongruent melting compound  $2\text{LiOH} \cdot \text{KOH}$  was found in the system. The system LiOH-NaOH is the most complex of the three systems. Limited solid solutions appear on the side of LiOH and KOH. Two chemical compounds are formed:  $\alpha\text{-NaOH} \cdot 3\text{LiOH}$  and  $\text{NaOH} \cdot \text{LiOH}$ . The phase diagram of the system Li, Na, K || OH was plotted. Double compounds occur in the system. Polymorphous changes of the components take place and phase X appears which probably is a ternary compound. Nine ranges of crystallization can be seen on the diagram:

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SOV/78-4-1-24/48

The Ternary System of Hydroxides of Lithium, Sodium, and Potassium

1)  $\alpha$ -NaOH, 2)  $\beta$ -NaOH, 3)  $\alpha$ -KOH, 4)  $\beta$ -KOH, 5) LiOH,  
6)  $\alpha$ -LiOH.KOH, 7)  $\alpha$ -3LiOH.NaOH, 8)  $\beta$ -3LiOH.NaOH, 9) phase X.  
Addition of lithium hydroxide to melts of potassium and  
sodium hydroxide causes the melting temperature of the melts  
to drop very slightly. There are 4 figures,  
6 tables, and 8 references, 6 of which are Soviet.

SUBMITTED: July 24, 1957

Card 2/2

VILUTIS, N.I.; ~~RESHETNIKOV~~, N.A.

Reaction between sodium and lithium hydroxides and bromides in the  
absence of a solvent. Izv.Sib.otd.AN SSSR no.9:88-100 '60.

(MIRA 13:11)

1. Irkutskiy meditsinskiy institut.

(Sodium compounds)

(Lithium compounds)

RESHETNIKOV, N.A.

Heats of formation of some binary compounds. Zhur.neorg. khim.6  
no.3:682-686 Mr '61. (MIRA 14:3)  
(Heat of formation) (Fluorine compounds)(Hydroxides)